

REMARKS

Overview

This amendment is in response to the Office Action mailed January 3, 2008. The Office Action has been carefully reviewed. No claims have been amended or cancelled. Claim 67 is new. The present response is an earnest effort to place all claims in proper form for allowance.

ISSUES UNDER 35 U.S.C. § 103

Claims 1, 4, 21-22, 38, 46-47, 50, and 58 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,603,818 to Dress, Jr. et al. These rejections are respectfully traversed.

In particular note that claim 1 recites "a set of ten predetermined pulse durations." In addition, claim 1 recites "wherein each of the pulse durations within the set of ten predetermined pulse durations correspond to one of integers 0 through 9." As the Office Action recognizes "Dress does not specifically disclose generating a set of ten predetermined pulse durations, one of which corresponds to the bits of data" (Office Action, p. 2). The Office Action indicates:

"However, it is well known that a pulse generator such as pulse generator 1250 of Dress can generate pulses of different durations. Dress discloses its invention allows both the bandwidth and position in frequency of an individual pulse to be determined (col. 5, lines 60-63). Dress also discloses generation and transmission of [a] pulses of longer durations (col. 3, lines 55-67, col. 5, lines 64-67). Accordingly, it would have been obvious to a person of ordinary skill in the art at the time of invention that the data pulse signal generation and transmission system of Dress can generate pulses of different durations, or pulses of ten predetermined pulse durations, to increase the transmission information rate and to allow a more versatile architecture (Dress, col. 3, lines 26-35)."

The Office Action further recognizes that "Dress further differs from the claimed invention in that Dress does not specifically disclose pulse durations correspond to one of integers 0 through 9." The Office Action indicates:

"Dress discloses a composite pulse representing a binary code can be generated (col. 2, lines 56-59 and fig. 8). Therefore it would have been obvious to a person of ordinary skill in the art at the time of invention that the signal pulse generation and transmission system of Dress that generates pulses representing binary codes can also generate and transmit pulses of different duration corresponding to integers 0 through 9 such that different data signals can be transmitted."

It is respectfully submitted that it would not have been obvious for one skilled in the art to modify the teachings of Dress, to provide for a set of ten predetermined pulse durations corresponding to integers 0 through 9. One way in which Dress teaches away from such a modification is by XORing a chipping sequence with data bits (see e.g. FIG 12, col. 11, lines 1-18). Thus, as in the conventional way, Dress is clearly concerned with a binary data stream. By so teaching, Dress fails to recognize or appreciate the advantages of using ten pulse durations to correspond with the integers 0 through 9.

Moreover, the use of ten pulse durations to correspond with the integers 0 through 9 may seem to be an inefficient process in view of Dress. Dress teaches that higher data rates may be obtained by transmitting several pulses each with a different derivative order at the same time (see e.g. col. 7, lines 21-47). Dress even teaches a set of symbol codes for 128 different possible symbols in a single composite pulse, or 255 possible symbols when pulse phase is used (col. 7, lines 48-54). Yet in all of Dress's discussion, it is clear that Dress is focused on symbol sets which are multiples of 2. Thus, one skilled in the art, considering Dress as a whole, would not

consider it obvious to use ten pulse durations which correspond with integers 0 through 9.

Therefore, it is respectfully submitted that these rejections should be withdrawn.

It is further observed that one of the benefits of the base-10 pulse durations of the claimed invention is that each pulse can represent data in a more human understandable manner. For example, character codes of data may be represented by base-10 numbers. In this way, any pulse received intrinsically more information about the data it ultimately represents than in traditional communication systems such as Dress.

For all these reasons, it is respectfully submitted that these rejections should be withdrawn.

Claims 3, 45, and 49 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Dress, Jr. et al. in view of U.S. Patent No. 6,198,783. These rejections are respectfully traversed. In particular, neither Dress nor Campana alone or in combination disclose a base 10 representation of a character using ultrawideband pulses. Therefore, it is respectfully submitted that these rejections should be withdrawn.

Claims 62-64 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Dress, Jr. et al. in view of U.S. Patent No. 4,931,751 to Keller et al. These rejections are respectfully traversed. In particular, neither Dress nor Keller et al. alone or in combination disclose a base 10 representation of a character using ultrawideband pulses. Therefore, it is respectfully submitted that these rejections should be withdrawn.

New claim

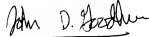
Claim 67 is new and uses alternative language to describe the invention. Support for this amendment is clear at least from the original claims.

Conclusion

Please consider this a Request for One-Month Extension of Time from April 3, 2008 to May 3, 2008 and charge Deposit Account No. 26-0084 the amount of \$60.00 for this extension. No other fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Reconsideration and allowance is respectfully requested.

Respectfully submitted,



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